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University of California
College of Agriculture
Agricultural Experiment Station
Berkeley, California

SEASONAL LABOR NEEDS FOR CALIFORNIA CROPS

MENDOCINO COUNTY

Progress Report No. 23

by

R. L. Adams

Preliminary -- Subject to Correction

December, 1936

Contribution from the
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(Farm Labor Survey -- July-December, 1936)

Progress Report No. 23

Seasonal Labor Needs for California Crops

Mendocino County

Scope of Presentation.-- The following considerations govern the presentation of this progress report:

1. The data are confined to the area indicated above.

2. The data are confined solely to crops, livestock needs being ignored.

3. The findings apply only to occasional or seasonal labor requirements as distinguished from labor contributed by farm operators and by workers employed on a year-round or regular basis of employment.

4. Attention is concentrated upon workers required for hand tasks -- planting, thinning, weeding, hoeing, and harvesting -- without including teamsters, tractor drivers, irrigators, and shed packers of vegetables or fruits.

5. The presentation includes the so-called migratory, transient, or roving workers which comprise an important source of help needed in connection with certain tasks and at "peak" times which seasonally arise in connection with many field, truck, and fruit crops commercially produced in California.

6. This report is confined to California's need for seasonal agricultural workers because of the more pressing problems liable to arise in connection therewith. A later study is planned which will deal with other kinds of labor involved in the production of California's many crops.

Brief Description of the Area.-- Mendocino County is situated on the northern half of the California Coast, its southern boundary being about 70 miles northwest of San Francisco Bay. Its coast-line boundary extends for about 80 miles, and it has an average width of 40 miles east and west. It lies in the Coast Range mountains which occupy a belt 50 to 70 miles wide extending from the coast eastward to the Sacramento Valley. A straight line running east and west bounds it from Humbolt and Trinity counties on the north and its southern limits extend to the Sonoma County line. The farming area of the county is located in two distinctly different physiographic regions. The major portion of agricultural land lies in the Russian River drainage basin. It occupies an area about 36 miles long and from 7 to 12 miles wide, including several arable valleys, some of which are part of a large valley basin, and intervening are rough, hilly areas. Elevations of the various valleys vary from 475 feet above sea level at the lower end of Sanel Valley to 1,000 feet above sea level in the upper part of Potter Valley. Hops, grapes, fruits, alfalfa, grain, and grain hay are the principal crops. The Russian River Valley is one of the main hop-growing centers of California.

The second farming district is situated in the central part of the county about 120 miles northwest of San Francisco. It is about 30 miles square and is bounded on all sides by high hills and mountains. The only crops grown extensively are grain and grain hay, small acreages being devoted to truck crops. The county has a total land area of 2,264,960 acres, of which 93,424 acres are available for crops.

Crops, Acreages, and Production.-- The basis used in calculating occasional or seasonal need for labor in addition to that furnished by farm operators and regularly employed workers appears as table 1.

TABLE 1

Basis for Calculating Seasonal Labor Requirements
Mendocino County

Crop	Acreage	Production
Field crops:		
Alfalfa	6,323	16,937 tons
Corn (for grain)*	252	5,680 bushels
Grain - wheat	2,808	47,698 bushels
barley	1,637	43,775 bushels
oats	2,134	60,654 bushels
Hay (other than alfalfa)	16,366	22,081 tons
Hops	1,371	6,778 bales in 1935 †
Potatoes, Irish*	445	41,188 bushels
Vegetable crops: ǂ		
Snap beans ϕ	45	270 tons
Peas - spring	600	30,000 crates (of 2 bushels)
fall	200	11,067 crates
Tomatoes - canning	50	350 tons
Fruit and nut crops: ‖		
Almonds*	3	--
Apples	1,304	4,500 tons (1,000 tons fresh (3,500 tons dried (fresh weight)†
Cherries*	20	--
Figs*	10	--
Grapes	6,692	15,000 tons (10,000 tons shipped (5,000 tons crushed
Peaches*	122	--
Pears	3,457	12,500 tons (8,500 tons fresh (4,000 tons dried †
Plums*	12	--
Prunes	1,338	1,000 tons (dried weight)†
Walnuts*	160	47,100 pounds merchantable

* Use of seasonal labor on these crops inconsequential and hence ignored.

† Drying ratio estimated to be as follows:

Hops	4 to 1
Apples	7.5 to 1
Pears	5.5 to 1
Prunes	2.25 to 1

ǂ Acreage data from Federal-State Crop Reporting Service. Acreage of specified vegetable crops by counties, 1935.

ϕ Data from U. S. Census, 1935, for crop year 1934.

‖ Acreage and production.

TABLE 1

Basis for Calculating Seasonal Labor Requirements
Mendocino County

Crop	Acreage	Production
Field crops:		
Alfalfa	6,325	16,937 tons
Corn (for grain)*	282	5,680 bushels
Grain - wheat	2,808	47,696 bushels
barley	1,637	43,775 bushels
oats	2,134	69,694 bushels
Hay (other than alfalfa)	16,366	22,081 tons
Hops	1,371	6,378 bales in 1950 †
Potatoes, Irish*	445	41,188 bushels
Vegetable crops: ‡		
Snap beans ¢	45	270 tons
Peas - spring	600	70,000 crates (or 2 bushels)
fall	200	11,087 crates
Tomatoes - canning	80	280 tons
Fruit and nut crops: ‖		
Almonds*	3	--
Apples	1,304	4,500 tons (1,000 tons fresh (3,500 tons dried (fresh weight)†
Cherries*	20	--
Figs*	10	--
Grapes	6,682	15,000 tons (10,000 tons shipped (5,000 tons dried (4,000 tons dried†
Peaches*	122	--
Pears	3,457	12,500 tons (8,500 tons fresh (4,000 tons dried†
Plums*	12	--
Prunes	1,338	1,000 tons (dried weight)†
Walnuts*	160	47,100 pounds merchantable

* Use of seasonal labor on these crops inconsequential and hence ignored.

† Drying ratio estimated to be as follows:

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‡ Acreage data from Federal-State Crop Reporting Service. Acreage of specified vegetable crops by counties, 1939.

¢ Data from U. S. Census, 1935, for crop year 1934.

‖ Acreage and production by counties, 1939. Federal-State Crop Reporting Service. Data from U. S. Census, 1935, for crop year 1934.

Operations Requiring Seasonal Labor and Time of Need.-- Farm operations requiring the use of seasonal or occasional labor for the various crops raised in Mendocino County are indicated in table 2. This tabulation does not include the employing of shed workers needed to wash, pack, and prepare various commodities for shipping and marketing.

TABLE 2

Operations Requiring Use of Seasonal Labor and Times of Needs by Crops
Mendocino County

Crop	Operation	Time of need	Per cent of work done by seasonal help	Output per man-day
Field crops:				
Alfalfa	Shocking	May 1 to Sept. 30 all acreage each month	50	8 acres
	Hauling and stacking	May 1 to Sept. 30	50	3.3 acres
Grain	Harvesting	June 15-30 -- 50 per cent of acreage July 1-15 -- 50 per cent of acreage	50	5 acres
Hay, other than alfalfa	Mowing Raking Shocking	June 1-15 -- all acreage	50	7.5 acres 15.0 acres 30 acres
Hops	Pruning, stringing, and training	March 20-31 -- 1 man-day per acre April 1-30 -- 4 man-days per acre May 1-31 -- 4 man-days per acre June 1-30 -- 4 man-days per acre July 1-15 -- 2 man-days per acre	100	Total of 15 man-days per acre for season
	Picking	Aug. 20-31 -- 50 per cent of crop Sept. 1-10 -- 50 per cent of crop	100	250 pounds green weight
	Drying	Aug. 20-31 -- 50 per cent of crop Sept. 1-10 -- 50 per cent of crop	100	4,000 pounds green weight
	Baling	Sept. 10-30 -- all of crop	66	12 bales (of 200 pounds dry weight)

Table continued on next page.

Operations Requiring Seasonal Labor and Time of Need.-- Farm operations requiring the use of seasonal or occasional labor for the various crops raised in Mendocino County are indicated in table 2. This tabulation does not include the employing of shed workers needed to wash, pack, and prepare various commodities for shipping and marketing.

TABLE 2

Operations Requiring Use of Seasonal Labor and Times of Needs by Crops
Mendocino County

Crop	Operation	Time of need	Per cent of work done by seasonal help	Output per man-day
Field crops:				
Alfalfa	Shocking	May 1 to Sept. 30 each month	50	4 acres
	Hauling and stacking	May 1 to Sept. 30	50	3.2 acres
Grain	Harvesting	June 15-30 -- 50 per cent of acreage July 1-15 -- 50 per cent of acreage	50	5 acres
Hay, other than alfalfa	Mowing Raking Shocking	June 1-15 -- all acreage	50	1.3 acres 1.0 acres .50 acres
Hops	Pruning and training	March 20-31 -- 1 man-day per acre April 1-30 -- 4 man-days per acre May 1-31 -- 4 man-days per acre June 1-30 -- 4 man-days per acre July 1-15 -- 2 man-days per acre		Total of 15 man-days per season
	Picking	Aug. 20-31 -- 50 per cent of crop Sept. 1-10 -- 50 per cent of crop	100	250 pounds green weight
	Drying	Aug. 20-31 -- 50 per cent of crop Sept. 1-10 -- 50 per cent of crop	100	4,000 pounds green weight
	Baling	Sept. 10-30 -- all of crop	66	12 bales (of 200 pounds dry weight)

Table continued on next page.

Table 2 continued.

Crop	Operation	Time of need	Per cent of work done by seasonal help	Output per man-day
Vegetable crops:				
Beans, string	Picking for canning	July 15-30 -- 20 per cent of crop Aug. 1-31 -- 50 per cent of crop Sept. 1-30 -- 30 per cent of crop	100	250 pounds
Peas, green*	Picking	May 1-31 -- 25 per cent of spring crop June 1-30 -- 75 per cent of spring crop July 1-31 -- 10 per cent of fall crop Aug. 1-31 -- 40 per cent of fall crop Sept. 1-30 -- 40 per cent of fall crop Oct. 1-31 -- 10 per cent of fall crop	100	5 crates (of 55 pounds)
Tomatoes, canning	Picking	Sept. 1-30 -- 60 per cent of crop Oct. 1-20 -- 40 per cent of crop	100	2,500 pounds
Fruit and nut crops:				
Apples	Pruning	Dec. 1-31 -- 1/3 of acreage Jan. 1-31 -- 1/3 of acreage Feb. 1-28 -- 1/3 of acreage	33	0.2 acre
	Brush burning	Dec. 1-31 -- 1/3 of acreage Jan. 1-31 -- 1/3 of acreage Feb. 1-28 -- 1/3 of acreage	33	1.0 acre
	Thinning -- 20 per cent of acreage	May -- 50 per cent of job June -- 50 per cent of job	33	0.2 acre
	Spraying	Dec. -- 1/3 of acreage Jan. -- 1/3 of acreage Feb. -- 1/3 of acreage April 15-30 -- 2/3 of acreage May 1-31 -- 2/3, once; 1/3, twice	50	1.3 acres (= 100 trees)

Table continued on next page.

Crop	Operation	Time of need	Per cent of work done by seasonal help	Output per man-day
Vegetable crops: Beans, string	Picking for canning	July 15-30 -- 20 per cent of crop Aug. 1-31 -- 50 per cent of crop Sept. 1-30 -- 30 per cent of crop	100	250 pounds
Peas, green	Picking	May 1-31 -- 25 per cent of spring crop June 1-30 -- 75 per cent of spring crop July 1-31 -- 10 per cent of fall crop Aug. 1-31 -- 40 per cent of fall crop Sept. 1-30 -- 40 per cent of fall crop Oct. 1-31 -- 10 per cent of fall crop	100	6 crates (or 55 pounds)
Tomatoes, canning	Picking	Sept. 1-30 -- 60 per cent of crop Oct. 1-20 -- 40 per cent of crop	100	2,500 pounds
Fruit and nut crops: Apples	Pruning	Dec. 1-31 -- 1/3 of acreage Jan. 1-31 -- 1/3 of acreage Feb. 1-28 -- 1/3 of acreage	33	1.0 acre
	Brush burning	Dec. 1-31 -- 1/3 of acreage Jan. 1-31 -- 1/3 of acreage Feb. 1-28 -- 1/3 of acreage	33	1.0 acre
	Thinning -- 20 per cent of acreage	May -- 50 per cent of job June -- 50 per cent of job	33	0.3 acre
	Spraying	Dec. -- 1/3 of acreage Jan. -- 1/3 of acreage Feb. -- 1/3 of acreage April 15-30 -- 1/3 of acreage May 1-31 -- 1/3 of acreage	80	1.3 acres (= 100 trees)

Table 2 continued.

Crop	Operation	Time of need	Per cent of work done by seasonal help	Output per man-day
Fruit and nut crops: Apples (contd.)	Spraying (contd.)	June 1-30 -- 2/3, once; 1/3, twice July 1-15 -- 2/3 of acreage		
	Picking from trees	July 20-30 -- 5 per cent of crop Aug. 1-31 -- 15 per cent of crop Sept. 1-30 -- 35 per cent of crop Oct. 1-31 -- 35 per cent of crop Nov. 1-15 -- 10 per cent of crop	60	50 boxes (= 2,100 pounds)†
	Drying	Aug. 1-31 -- 25 per cent of job Sept. 1-30 -- 25 per cent of job Oct. 1-31 -- 25 per cent of job Nov. 1-30 -- 25 per cent of job	75	200 pounds dry weight
Grapes, wine	Pruning	Dec. 15-31 -- 1/6 of acreage Jan. 1-31 -- 1/3 of acreage Feb. 1-28 -- 1/3 of acreage Mar. 1-15 -- 1/6 of acreage	50	0.75 acre
	Burning brush	Dec. 15-31 -- 1/6 of acreage Jan. 1-31 -- 1/3 of acreage Feb. 1-28 -- 1/3 of acreage Mar. 1-15 -- 1/6 of acreage	50	5.0 acres
	Picking	Sept. 15-30 -- 5 per cent of crop Oct. 1-31 -- 50 per cent of crop Nov. 1-15 -- 45 per cent of crop	90	2,400 pounds

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Table 2 continued.

Crop	Operation	Time of need	Per cent of work done by seasonal help	Output per man-day
Fruit and nut crops (contd.): Pears	Pruning	Nov. 15-30 -- 15 per cent of acreage Dec. 1-31 -- 20 per cent of acreage Jan. 1-31 -- 40 per cent of acreage Feb. 1-28 -- 25 per cent of acreage	65	0.2 acre
	Picking	Aug. 1-31 -- 80 per cent of crop Sept. 1-15 -- 20 per cent of crop	90	1,600 pounds
	Cutting for drying	Aug. 15-31 -- 50 per cent of job Sept. 1-20 -- 50 per cent of job	100	1,000 pounds
	Other dry-yard work	Aug. 15-31 -- 33 per cent of job Sept. 1-30 -- 66 per cent of job	100	26.5 hours per fresh ton
Prunes	Pruning -- 25 per cent of acreage	Dec. -- 20 per cent of acreage Jan. -- 40 per cent of acreage Feb. -- 40 per cent of acreage	50	0.2 acre
	Brush burning	Dec. -- 20 per cent of acreage Jan. -- 40 per cent of acreage Feb. -- 40 per cent of acreage	50	2.5 acres
	Spraying -- once	Dec. 1-31 -- 1/2 of acreage Jan. 1-31 -- 1/2 of acreage	50	1.3 acres
	Picking up	Sept. 5-30 -- 70 per cent of crop Oct. 1-15 -- 30 per cent of crop	100	1,500 pounds
	Dipping and drying	Sept. 5-30 -- 70 per cent of crop Oct. 1-15 -- 30 per cent of crop	95	8.3 hours per fresh ton

* 1934 carlots of peas by rail. No data on 1935 shipments by rail.

† A portion of the apple crop is picked up from the ground, in which case the output per man-day is about 2 tons.

Findings of Seasonal Labor Needs.-- Details and summaries of seasonal labor requirements of Mendocino County agriculture are presented as table 3. The "size of task" are figures drawn from table 1, in terms of either acreage or output in tons, crates, boxes, or whatever unit is commonly used. The "output per man-day" is an average figure for the entire acreage or output figured in crates, hampers, boxes, or other units as indicated in the table. If the work is of a nature that requires a crew different members of which perform different tasks, then the average shown is per man based on the entire crew. Length of day is 9 hours, November to February; 10 hours March to October, unless otherwise stated. Wide variations in output occur between farm and farm, field and field, and season and season, because of differences in soil types, climatic conditions, weeds, yields, and other factors influencing the amount of work that a laborer can perform in a given day. Moreover, the basis of output is a mature, experienced male worker without reference to use of women, children, and more or less inexperienced help that is sometimes used in connection with certain of the tasks requiring use of seasonal workers. The column headed "available days" reflects (a) limitations set from the period within which the work must be performed because of the nature of the task, such as transplanting, thinning, weeding, and cutting, and (b) available days as determined by weather conditions, inclement weather reducing the number of days when a required task can be performed. The "required number of individuals" is given in terms of workers as noted above in connection with "output per man-day."

It is probable that the estimated number of workers required, as recorded in table 3, will often be too low, for the reason that "peaks" frequently occur, during which an unusually large proportion of the job is done in a very short period. This would naturally require a much greater number of workers than when the work is spread over a longer period, even though the total amount of labor (in man-days) remains the same.

TABLE 3

Seasonal Labor Needs -- Mendocino County -- by Months and Tasks

Month	Crop and task	Size of task	Output per man-day	Required man-days	Available days	Required number of workers*
January	Apples: Pruning	145 acres †	0.2 acre	725	15	49
	Burning brush	145 acres †	1.0 acre	145	15	10
	Spraying	217 acres †	1.3 acres	167	15	12
	Grapes (wine): Pruning	1,115 acres †	0.75 acre	1,487	15	100
	Pears: Pruning	899 acres †	0.2 acre	4,495	15	300
	Prunes: Pruning	67 acres †	0.2 acre	335	15	23
	Burning brush	67 acres †	2.5 acres	27	15	2
	Spraying	335 acres †	1.3 acres	258	15	18
	Totals			7,639	15	510 man-months
February	Apples: Pruning	145 acres †	0.2 acre	725	19	39
	Burning brush	145 acres †	1.0 acre	145	19	8
	Spraying	217 acres †	1.3 acres	167	19	9
	Grapes (wine): Pruning	1,115 acres †	0.75 acres	1,487	19	79
	Pears: Pruning	562 acres †	0.2 acre	2,810	19	148
	Prunes: Pruning	67 acres †	0.2 acre	335	19	18
	Burning brush	67 acres †	2.5 acres	27	19	2
	Totals			5,696	19	300 man-months
March	Hops: Pruning, stringing, and training	1,371 acres	1.0 acre	1,371	7	196 (Mar. 20-31)
	Grapes (wine): Pruning	558 acres †	0.75 acre	744	9	83 (May 1-15)
	Totals			2,115	18	118 man-months
April	Hops: Pruning, stringing, and training	1,371 acres	0.25 acre	5,484	22	250
	Apples: Spraying	434 acres †	1.3 acres	334	11	31 (April 15-30)
	Totals			5,818	22	265 man-months
May	Alfalfa: Shocking	3,162 acres †	8.0 acres	396	23	18
	Hauling and stacking	3,162 acres †	3.3 acres	959	23	42
	Hops: Pruning, stringing, and training	1,371 acres	0.25 acre	5,484	23	239
	Peas (green): Picking (spring crop)	7,500 crates	5.0 crates	1,500	23	

Table continued on next page.

Table 3 continued.

Month	Crop and task	Size of task	Output per man-day	Required man-days	Available days	Required number of workers*
May (contd.)	Apples: Thinning	43 acres †	0.2 acre	215	23	10
	Spraying	868 acres †	1.3 acres	668	23	30
	Totals			9,222	23	401 man-months
June	Alfalfa: Shocking	3,162 acres †	8.0 acres	396	25	16
	Hauling and stacking	3,162 acres †	3.3 acres	959	25	39
	Grain: Harvesting	1,645 acres †	5.0 acres	329	13	26 (June 15-30)
	Hay (other than alfalfa):					
	Mowing	8,183 acres †	7.5 acres	1,092	12	91 (June 1-15)
	Raking	8,183 acres †	15.0 acres	546	12	46 (June 1-15)
	Shocking	8,183 acres †	30.0 acres	273	12	23 (June 1-15)
	Hops: Pruning, stringing, and training	1,371 acres	0.25 acre	5,484	25	220
	Peas (green): Picking (spring crop)	22,500 crates	5.0 crates	4,500	25	180
	Apples: Thinning	44 acres †	0.2 acre	220	25	9
	Spraying	868 acres †	1.3 acres	668	25	27
	Totals			14,467	25	579 man-months
July	Alfalfa: Shocking	3,162 acres †	8.0 acres	396	26	16
	Hauling and stacking	3,162 acres †	3.3 acres	959	26	37
	Grain: Harvesting	1,645 acres †	5.0 acres	329	13	26 (July 1-15)
	Hops: Pruning, stringing, and training	1,371 acres	0.5 acre	2,742	13	211 (July 1-15)
	Beans (string): Picking for canning	54 tons	250.0 pounds	432	13	34 (July 15-30)
	Peas (green): Picking (fall crop)	1,107 crates	5.0 crates	222	26	9
	Apples: Spraying	434 acres †	1.3 acres	334	13	26 (July 1-15)
	Picking from trees	135 tons †	2,100.0 pounds	129	9	15 (July 20-31)
	Totals			5,543	26	214 man-months
August	Alfalfa: Shocking	3,162 acres †	8.0 acres	396	26	16
	Hauling and stacking	3,162 acres †	3.3 acres	959	26	37
	Hops: Picking	2,711,200 pounds ‡	250.0 pounds ‡	10,845	9	1,205 (Aug. 20-31)
	Drying	2,711,200 pounds ‡	4,000.0 pounds ‡	678	9	76 (Aug. 20-31)
	Beans (string): Picking for canning	135 tons	250.0 pounds	1,080	26	42

Table continued on next page.

Table 3 continued.

Month	Crop and task	Size of task	Output per man-day	Required man-days	Available days	Required number of workers*
August (contd.)	Peas (green): Picking (fall crop)	4,427 crates	5.0 crates	886	26	35
	Apples: Picking from trees	405 tons†	2,100.0 pounds	386	26	15
	Drying	656 tons†	ϕ	875	26	34
	Pears: Picking	9,000 tons†	1,600.0 pounds	11,250	26	433
	Cutting for drying	2,000 tons	1,000.0 pounds	4,000	13	308 (Aug. 15-31)
	Other dry-yard labor	1,333 tons	ϕ	3,536	13	272 (Aug. 15-31)
	Totals			34,891	26	1,342 man-months
September	Alfalfa: Shocking	3,162 acres†	8.0 acres	396	25	16
	Hauling and stacking	3,162 acres†	3.3 acres	959	25	39
	Hops: Picking	2,711,200 pounds†	250.0 pounds†	10,845	8	1,356 (Sept. 1-10)
	Drying	2,711,200 pounds†	4,000.0 pounds†	678	8	85 (Sept. 1-10)
	Baling ℔	4,473 bales†	12.0 bales	373	25	15
	Beans (string): Picking for canning	81 tons	250.0 pounds	648	25	26
	Peas (green): Picking (fall crop)	4,427 crates	5.0 crates	886	25	36
	Tomatoes (canning): Picking	210 tons	2,500.0 pounds	168	25	7
	Apples: Picking from trees	945 tons†	2,100.0 pounds	900	25	36
	Drying	657 tons†	ϕ	876	25	36
	Grapes (wine): Picking	675 tons†	2,400.0 pounds	563	12	47 (Sept. 15-30)
	Pears: Picking	2,250 tons†	1,600.0 pounds	2,813	13	217 (Sept. 1-15)
	Cutting for drying	2,000 tons	1,000.0 pounds	4,000	17	236 (Sept. 1-20)
	Other dry-yard work	2,667 tons	ϕ	7,075	25	283
	Prunes: Picking up	1,575 tons	1,500.0 pounds	2,100	21	100 (Sept. 5-30)
	Dipping and drying	1,497 tons†	ϕ	1,248	21	60 (Sept. 5-30)
	Totals			34,528	25	1,382 man-months
October	Peas (green): Picking (fall crop)	1,106 crates	5.0 crates	222	22	11
	Tomatoes (canning): Picking	140 tons	2,500.0 pounds	112	14	8 (Oct. 1-20)
	Apples: Picking from trees	945 tons†	2,100.0 pounds	900	22	41
	Drying	656 tons†	ϕ	875	22	40
	Grapes (wine): Picking	6,750 tons†	2,400.0 pounds	5,625	22	256
	Prunes: Picking up	675 tons	1,500.0 pounds	900	11	82 (Oct. 1-15)
	Dipping and drying	641 tons†	ϕ	535	11	49 (Oct. 1-15)
	Totals			9,169	22	417 man-months

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Table 3 continued.

Month	Crop and task	Size of task	Output per man-day	Required man-days	Available days	Required number of workers*
November	Apples: Picking from trees	270 tons †	2,100.0 pounds	258	22	12
	Drying	656 tons †	ϕ	875	22	40
	Grapes (wine): Picking	6,075 tons †	2,400.0 pounds	5,063	11	461 (Nov. 1-15)
	Pears: Pruning	337 acres †	0.2 acre	1,685	11	154 (Nov. 15-30)
	Totals			7,881	22	359 man-months
December	Apples: Pruning	145 acres †	0.2 acre	725	15	49
	Burning brush	145 acres †	1.0 acre	145	15	10
	Spraying	218 acres †	1.3 acre	168	15	12
	Grapes (wine): Pruning	558 acres †	0.75 acre	744	7	107 (Dec. 15-31)
	Pears: Pruning	449 acres †	0.2 acre	2,245	15	150
	Prunes: Pruning	33 acres †	0.2 acre	165	15	11
	Burning brush	33 acres †	2.5 acres	14	15	1
	Spraying	334 acres †	1.3 acres	257	15	18
	Totals			4,463	15	298 man-months

* On a monthly basis unless otherwise noted.

† Portion of task performed by seasonal labor.

ǂ Green weight.

ϕ Dry-yard labor, other than cutting estimated to be as follows:

Apples: 200 pounds, dry weight, per man-day.
Pears: 26.5 man-hours per fresh ton
Prunes: 8.3 man-hours per fresh ton

¶ Dry weight, 200 pounds to a bale.

TABLE 4

Summary of Seasonal Labor Needs by Months

Mendocino County

1935

Month	Required man-days of seasonal labor	Available days	Required man-months of seasonal labor
January	7,639	15	510
February	5,696	19	300
March	2,115	18	118
April	5,818	22	265
May	9,222	23	401
June	14,467	25	579
July	5,543	26	214
August	34,891	26	1,342
September	34,528	25	1,382
October	9,169	22	417
November	7,881	22	359
December	4,463	15	298
Total	141,432	--	6,185

Notes

Notes on Table 2.-- Data concerning "time of need" as shown in this table break down required seasonal labor into the period in which the work is performed in order to permit a subsequent determination of labor needs by months (table 3). Some operations are performed only to a limited extent with seasonal labor. For instance, only about 50 per cent of the labor in harvesting grain is done by seasonal workers. When a job extends over several different months, the proportionate amount for each month is shown.

The amount of work done each month is based on the cropping syster followed during 1935. The allotting of amounts of work is based on findings concerning local farm practices, and required time to "make" a crop resulting from inquiry of producers, and records of carlot shipments, the latter proving helpful in fixing dates of planting and of subsequent tasks involved in producing certain crops. Proportionate amounts of output harvested each month were determined from data of local practices with respect to harvesting, and from carlot shipments of perishable products. Records of truck shipments were also used when available.

Notes on Table 3.-- Table 3 is the condensed summary of labor needs as worked out for Mendocino County as a result of findings pertinent to 1935. The data are presented by months with the tasks which were performed in each month indicated by both crop and task. The size of the job was calculated from the data appearing in table 1 (acreage and production) and table 2 (task, time of performance, and percentage of work pertinent to a given month). The output per man-day was calculated as indicated in the foreword presenting table 3. The number of required man-days is a result of dividing the size of task by output per man-day. The available days for the different tasks involve two variables. The first is the

number of days when field work is possible because of favorable weather conditions. The basis for this column was determined from a study of the monthly weather charts of the United States Weather Bureau for the years 1933, 1934, and 1935. These data indicated available days per month as follows (based on a 26-day working month without allowance for holidays):

Month	Available days	Length of work day	Month	Available days	Length of work day
		hours			hours
January	15	9	July	26	10
February	19	9	August	26	10
March	18	10	September	25	10
April	22	10	October	22	10
May	23	10	November	22	9
June	25	10	December	15	9

Source of data: Based on precipitation records of the Ukiah station of the United States Weather Bureau for the years 1933, 1934, and 1935.

The second factor influencing the number of available days was the size of the job. If the output was only a few cars, then the number of days was limited to the time needed to get out those cars efficiently. If a field operation had to be performed in a period less than the number of available days in the month, then the specific number of days was noted. These restrictions are shown in parentheses. For example, in June harvesting grain was limited to the last half of the month, in July spraying apples was limited to the first half of the month, etc.

The totals of table 3 show the total required man-days of needed seasonal labor, the available days for field work during the month, and the necessary number of men (as defined in the opening paragraph of table 3) required on a monthly basis to care for the tasks ordinarily performed by seasonal workers.

In an area such as Mendocino County, involving a variety of annual crops, the findings as set forth in this report are bound to fluctuate materially from year to year, because of the market outlook upon what and how much acreage is planted, and when it is planted; because of variable seasonal conditions affecting yields, time of performing operations, and available days; and because of harvesting operations on certain crops being speeded up to supply a good market, or retarded to avoid a poor one, resulting in marked variations in the need for harvest labor.

number of days when field work is possible because of favorable weather conditions. The basis for this column was determined from a study of the monthly weather charts of the United States Weather Bureau for the years 1933, 1934, and 1935. These data indicated available days per month as follows (based on a 28-day working month without allowance for holidays):

Month	Available days	Length of work day	Month	Available days	Length of work day
		hours			hours
January	15	9	July	26	10
February	19	9	August	26	10
March	18	10	September	25	10
April	22	10	October	22	10
May	28	10	November	22	9
June	25	10	December	15	9

Source of data: Based on precipitation records of the Ukiah station of the United States Weather Bureau for the years 1933, 1934, and 1935.

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